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Agriculture, Biotechnology and Food

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SRC to provide testing services for Merial's IGENITY®

*Partnership gives Canadian cattle industry better
access to DNA testing tools*



Technologist Ernie Lemov at work in the applied genomics lab

More than ever, cattle producers look to genetics as a competitive tool in their breeding and marketing operations.

Down the line, consumers also benefit from meat products that are higher in quality and more traceable.

Canadian producers have had access to Merial's powerful IGENITY profiles since 2003, but DNA samples were sent to U.S. labs for testing. Now, thanks to a recent agreement between SRC and Merial Canada, IGENITY tests will be available in Saskatoon.

"We wanted to enhance our position in Canada, and SRC was a natural fit because of its strong relationship with Canadian breeding associations, not to mention its expertise in genetics and Single Nucleotide Polymorphism (SNP) technology," says Garth Elgie, Merial Canada's District Manager for Large Animal Products (Western Canada) and IGENITY Product Manager.

Breeding associations already look to SRC's laboratories to provide genetic tests needed for purebred registration. Now, as a partner with Merial, SRC can offer additional testing on samples sent in for parentage verification. IGENITY offers powerful, multiple marker analyses for such traits as tenderness, marbling, quality grade, fat thickness, ribeye area, hot

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Testing Services *(continued from page 1)*

carcass weight, yield grade, and coat colour. New maternal and reproduction traits for heifer pregnancy rate, maternal calving ease, and docility have recently been added to the beef profile.

"This gives our current client base a lot of added value, which they can in turn offer to their own clients," says Dale Kelly, SRC's Vice-President of Agriculture, Biotechnology and Food. "These are tools you can use to develop a better product, helping you choose the animals to be harvested under your brand. But it also enhances traceability, so you can give people the assurance you're providing a safe product."

Information tools like IGENITY are important to cattle producers at any point in the commodity cycle, notes Elgie. "It's all in how they use the information—they can make better decisions in terms of which animals to cull or continue breeding, or which animals can best represent the traits they want their brand known for." He adds that Merial will soon introduce testing to help producers select for feed efficiency.

The new partnership is an important development in helping SRC's Agriculture, Biotechnology and Food division fulfill its mandate, explains Kelly. "These are tools that will really move the industry forward in coming years and represent important and continuing advances in food safety and quality. We're extremely pleased to offer these capabilities to our clients in Saskatchewan and across Canada." ■

Behind the scenes: *Good laboratory practices ensure quality*

SRC's Health and Food unit is known for quality and reliability, but achieving this is more than a matter of having the right equipment, facilities, and people (although these certainly help). Many things happen behind the scenes to ensure the unit produces reliable, consistent results.

One of the most important is a management control system known as Good Laboratory Practices (GLP), which in simple terms involves following an extensive to-do list for any experiment or procedure, explains Research Scientist Amy Friesen.

"GLP is like a game plan, so that when you're doing the work everything is done the same way every time. This way, there is no question about the reproduction of results," says Friesen.

Documentation is an important part of the GLP game plan. It begins with standard operating procedures (SOPs), which are documents outlining the step-by-step processes for every procedure. The goal is to ensure standardization and reduce human error.

"SOPs have been a part of Health and Food since the unit was created and they're constantly being improved," adds Friesen.

More documentation comes in the form of batch records, which are detailed reports on every experiment. A batch record shows SOPs that were followed, ensures each step of an experiment is carried out, and includes tables and sheets of experiment data. Batch records are routinely audited and also archived for future reference.

Extensive documentation means scientists can trace back to any point in an experiment, saving valuable time when trying to locate the source of an error.



SRC's Health and Food team in the Biosafety Level 2 Fermentation Pilot Plant.

"Because everything is documented and controlled, if something ever does go wrong we can trace back to the critical points and not have to restart everything from scratch," says Technologist Kimberly Baniulis, who is responsible for quality assurance and control in Health and Food.

Training is another aspect of Good Laboratory Practices. All employees are trained from day one on GLP guidelines and the documentation system. Many employees have also taken training on Good Manufacturing Processes, the highest standard in the biopharmaceutical industry. And all Health and Food members undergo regular training on equipment operation, maintenance, and safety procedures.

Strict adherence to GLPs and continual training doesn't happen without the commitment of each Health and Food team member, notes Friesen.

"It really is a team effort—everyone understands the importance of doing this and really buys into the value this creates." ■

Agriculture, Biotechnology & Food Continues to Grow

Joining our team recently:

Tracy Acres, M.Sc., Technologist II, in our Health and Food unit;

Chris Barker, Ph.D., Senior Research Scientist, with GenServe Laboratories;

Mike Whiting, Business Unit Manager, with Health and Food;

and as of May 1... **Julius Pretorius**, Ph.D., Senior Scientist, will join our Bioprocessing Unit. ■

Our Scientific Team

Amy Friesen: Research Scientist

When faced with the need to explain her career to someone without a scientific background, Amy Friesen has an easy way of summing things up.

"I grow bacteria for a living," she explains.

It should be noted the bacteria are grown in SRC's state-of-the-art laboratory facilities (including the Biosafety Level 2 Fermentation Pilot Plant), and that Friesen plays a key role in serving clients in such key areas as vaccine development and food safety.

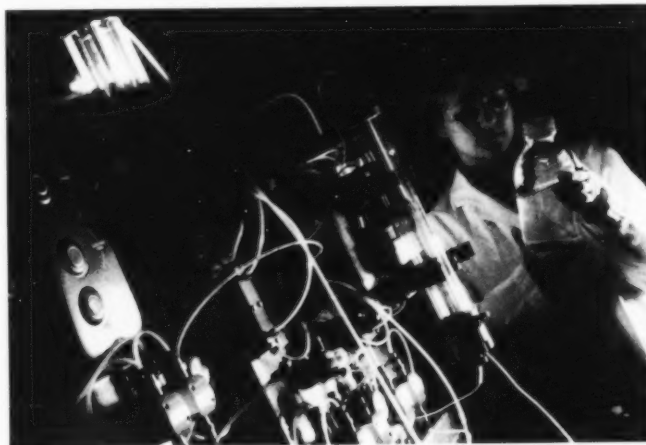
developing a commercial product. It's very interesting to be a part of that."

Friesen credits SRC for providing tremendous opportunities for career growth—she has attended seminars and conferences in North America and abroad, and collaborates daily with colleagues and clients who are at the top of their field.

"Our Fermentation Pilot Plant really is a world-class facility," she adds.

Friesen received her bachelor's and master's degrees in microbiology from the University of Saskatchewan.

She came to SRC five years ago after working for Agriculture and Agri-Food Canada in Beaverlodge, Alta., where she set up a microbiology lab to test for disease in honeybees across western Canada.



Research Scientist Amy Friesen at work in the Biosafety Level 2 Fermentation Pilot Plant.

"The longer answer is that working in a fermentation laboratory, we develop everything from vaccines to ethanol to chemical processes," says Friesen, Research Scientist for SRC's Health and Food unit. "We work at the stage where you're taking research into the commercial realm. So we might be working with an animal vaccine and actually seeing a small company in the process of

"Unlike pure research, there's a lot of variety at SRC because we're doing work for many different clients. That's something I enjoy—getting to know a client's business, learning how we can help and then pulling it all together. There are constant challenges and real opportunities to learn," says Friesen. "I certainly can't see myself getting bored working at SRC. For me, this is the place to be." ■

SRC responding to need for biotech trait detection

In some countries, imported food or animal feed must be labelled if it contains a certain percentage of a genetically modified (GM) product.

This can be a real challenge for exporters from North America. Biotech is well-established here and it can be difficult keeping GM seeds out of shipments bound for countries with GM labelling laws. Small amounts of GM corn, canola or soybeans from a combine or storage facility, or even a few volunteer plants in a field, can affect a shipment.

"It's a big issue in Europe, South Korea and certain Asian and African nations," explains SRC's Agriculture, Biotechnology and Food Geneticist Dr. Satish Rai.

In much of Europe, legislators have specified a threshold for GM content—generally 0.9 per cent—and as long as shipments stay below that threshold, products can be sold without restriction. Shipments above the threshold must be labelled as containing GM material. However, certain countries

have not set threshold and shipments containing any GM content are rejected.

As a result, there is considerable demand from exporters and producers for GM screening and quantification testing. Yet, to date, there has been limited availability of this testing in Canada and producers have had to turn to US-based laboratories.

To meet this market need, SRC is providing biotech trait detection and quantification testing in Saskatoon. The service is possible because of Dr. Rai's expertise in biotech trait detection and quantification, including both gene-specific and event-specific testing.

"It does require a lot of technical expertise and special equipment, but there is so much need for this kind of testing in Saskatchewan and other provinces," says Dr. Rai. "This is very important if producers want to export to markets with GM labelling laws and I think there will be a lot of demand for the service." ■



Associate Research Scientist Kevin Lang working in the applied genomics lab.

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